CLAIMS

1. A perovskite-type composite oxide represented by the following general formula (1):

$$A_xB_{(1-y)}Pd_yO_{3+\delta} \quad (1)$$

wherein A represents at least one element selected from rare earth elements and alkaline earth metals; B represents at least one element selected from transition elements (excluding rare earth elements, and Pd), Al and Si; x represents an atomic ratio satisfying the following condition: $1 < x$; y represents an atomic ratio satisfying the following condition: $0 < y \leq 0.5$; and δ represents an oxygen excess.

2. A perovskite-type composite oxide represented by the following general formula (2):

$$(A_aA'_bA''_c)(B_{1-(q+r)}B'_qPd_r)O_{3+\delta} \quad (2)$$

wherein A represents at least one element selected from La, Nd and Y; A′ represents at least one element selected from rare earth elements and alkaline earth metals (excluding La, Nd, Y, Ce, Pr and Tb); A″ represents at least one element selected from Ce, Pr and Tb; B represents at least one element selected from Mn, Fe, Co and Al; B′ represents at least one element selected from transition elements (excluding rare earth elements, and Mn, Fe, Co, Al and Pd) and Si;

a represents an atomic ratio satisfying the following condition: $0.5 < a \leq 1.3$; b represents an atomic ratio satisfying the following condition: $0 \leq b < 0.5$; (a + b) represent atomic ratios satisfying the following condition: $1 < (a + b) \leq 1.3$; c represents an atomic ratio satisfying the following condition: $0 \leq c \leq 0.2$; q represents an atomic ratio satisfying the following condition: $0 \leq q < 0.5$; r represents an atomic ratio satisfying the following condition: $0 < r \leq 0.5$; and δ represents an oxygen excess.

3. The perovskite-type composite oxide according to claim 2, wherein at least one of b, c and q is 0 in the general formula (2).

4. A catalyst composition comprising the perovskite-type composite oxide according to any one of claims 1 to 3.

5. The catalyst composition according to claim 4, which is an exhaust gas purifying catalyst.

6. The catalyst composition according to claim 4, which is a coupling reaction catalyst for organic synthesis.

7. A method for producing a perovskite-type composite oxide, which comprises a step of formulating materials in accordance with each atomic ratio of a perovskite-type composite oxide represented by the following general formula (1):

$$A_xB_{(1-y)}Pd_yO_{3+\delta} \qquad (1)$$

wherein A represents at least one element selected from rare

earth elements and alkaline earth metals; B represents at least one element selected from transition elements (excluding rare earth elements, and Pd), Al and Si; x represents an atomic ratio satisfying the following condition: $1 < x$; y represents an atomic ratio satisfying the following condition: $0 < y \leq 0.5$; and δ represents an oxygen excess.